

Claims

1. A speaker comprising:
 - 5 (a) an enclosure with at least one wall;
 - (b) an acoustic driver being attached to a front wall of the enclosure;
 - (c) an acoustic extension being mounted to the enclosure;
 - 10 (d) the acoustic extension being external of the enclosure and being operatively connected to an interior of the enclosure.
2. A speaker as claimed in claim 1, wherein the acoustic extension defines a serpentine passage operatively connected to the interior of the enclosure.
- 15 3. A speaker as claimed in claim 1, wherein the acoustic extension is mounted in an opening in a rear wall of the enclosure and is generally co-axial with the acoustic driver.
- 20 4. A speaker as claimed in claim 1, wherein the acoustic extension comprises a central stem, and a plurality of columns each being generally concentric with the central stem; the plurality of columns being mounted to an outer wall of the acoustic extension and an inner wall of the acoustic extension in an alternating and opposed manner to define therebetween an airflow passage operatively connected to the central stem and the interior.
- 25 5. A speaker as claimed in claim 4, wherein the plurality of columns comprises an inner column mounted to the outer wall and extending towards the inner wall, there being an air gap between a free end of the inner column and the inner wall.
- 30 6. A speaker as claimed in claim 4, wherein the plurality of columns comprises an intermediate column mounted to the inner wall and extending towards the outer wall, there being an air gap between a free end of the intermediate column and the outer wall.
- 35 7. A speaker as claimed in claim 4, wherein the plurality of columns comprises an outer column mounted to the outer wall and extending

towards a plane of the inner wall, there being an outlet air gap between the outer column and the inner wall.

- 5 8. A speaker as claimed in claim 4, wherein the plurality of columns comprises:

 - (a) an inner column mounted to the outer wall and extending towards the inner wall; there being an inner air gap between a free end of the inner column and the inner wall;
 - 10 (b) an intermediate column mounted to the inner wall and extending towards the outer wall, there being an intermediate air gap between a free end of the intermediate column and the outer wall; and
 - 15 (c) an outer column mounted to the outer wall and extending to a plane of the inner wall, there being an outlet air gap between the outer column and the inner wall.
9. A speaker as claimed in claim 7, wherein the outlet air gap faces towards the enclosure.
- 20 10. A speaker as claimed in claim 8, wherein the outlet air gap faces towards the enclosure.
- 25 11. A speaker as claimed in claim 4, wherein the acoustic extension is mounted in an opening in a rear wall of the enclosure and is generally co-axial with the acoustic driver.
- 30 12. A speaker as claimed in claim 5, wherein the acoustic extension is mounted in an opening in a rear wall of the enclosure and is generally co-axial with the acoustic driver.
13. A speaker as claimed in claim 6, wherein the acoustic extension is mounted in an opening in a rear wall of the enclosure and is generally co-axial with the acoustic driver.
- 35 14. A speaker as claimed in claim 7, wherein the acoustic extension is mounted in an opening in a rear wall of the enclosure and is generally co-axial with the acoustic driver.

15. A speaker as claimed in claim 8, wherein the acoustic extension is mounted in an opening in a rear wall of the enclosure and is generally co-axial with the acoustic driver.
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16. A speaker as claimed in claim 4, wherein junctions between the plurality of columns and each of the outer wall and inner wall, are curved.
17. A speaker as claimed in claim 6, wherein the enclosure comprises four mutually perpendicular side walls, the four mutually perpendicular side walls being extended to comprise the intermediate column.
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18. A speaker as claimed in claim 8, wherein the enclosure comprises four mutually perpendicular side walls, the four mutually perpendicular side walls being extended to comprise the intermediate column.
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19. A speaker as claimed in claim 13, wherein the enclosure comprises four mutually perpendicular side walls, the four mutually perpendicular side walls being extended to comprise the intermediate column.
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20. A speaker as claimed in claim 18, wherein the outer column extends forwardly to the vicinity of the front wall.
21. A speaker as claimed in claim 4, wherein the central stem defines an air volume, the air volume and the airflow passage being of a constant acoustic area.
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22. A speaker as claimed in claim 1, wherein the enclosure and a frame of the acoustic driver are made of a heat conductive material.
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23. A speaker as claimed in claim 20, wherein the enclosure and a frame of the acoustic driver are made of a heat conductive material.
24. A speaker as claimed in claim 18, wherein the enclosure and a frame of the acoustic driver are made of a heat conductive material.
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25. A speaker as claimed in claim 4, wherein the acoustic extension is adjustable relative to the enclosure, the adjustment being in a direction of a longitudinal axis of the central stem.
- 5 26. A speaker as claimed in claim 1, wherein the acoustic extension is removably attached to the enclosure.
27. A speaker as claimed in claim 1, wherein the acoustic extension is selected from the group consisting of: a bass reflex port, a tuned port, a
10 passive radiator, and a concentric loading.
28. A speaker as claimed in claim 4, wherein the central stem is mounted in an opening in a lower side wall of the enclosure, the acoustic extension acting as a pedestal for the enclosure.
- 15 29. An acoustic extension for external attachment to a speaker, the acoustic extension comprising:
- (a) a central stem,
 - (b) a plurality of columns each being generally concentric with the
20 central stem;
 - (c) the plurality of columns being mounted to an outer wall and an inner wall of the acoustic extension in an alternating and opposed manner to define therebetween an airflow passage operatively connected to the central stem and operably connectable to an
25 interior of the speaker.
30. An acoustic extension as claimed in claim 29, wherein the plurality of columns comprises an inner column mounted to the outer wall and extending towards the inner wall, there being an air gap between a free
30 end of the inner column and the inner wall.
31. An acoustic extension as claimed in claim 29, wherein the plurality of columns comprises an intermediate column mounted to the inner wall and extending towards the outer wall, there being an air gap between a free
35 end of the intermediate column and the outer wall.

32. An acoustic extension as claimed in claim 29, wherein the plurality of columns comprises an outer column mounted to the outer wall and extending to a plane of the inner wall, there being an outlet air gap between the outer column and the inner wall.
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33. An acoustic extension as claimed in claim 29, wherein the plurality of columns comprises:
- (a) an inner column mounted to the outer wall and extending towards the inner wall, there being an inner air gap between a free end of the inner column and the inner wall;
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- (b) an intermediate column mounted to the inner wall and extending towards the outer wall, there being an intermediate air gap between a free end of the intermediate column and the outer wall; and
- (c) an outer column mounted to the outer wall and extending to a plane of the inner wall, there being an outlet air gap between the outer column and the inner wall.
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34. An acoustic extension as claimed in claim 30, wherein junctions between the plurality of columns and the outer wall and inner wall, are curved.
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35. An acoustic extension as claimed in claim 29, wherein the central stem defines an air volume, the air volume and the airflow passage being of a constant acoustic area.
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36. An acoustic extension as claimed in claim 29, wherein the acoustic extension is adjustable relative to the enclosure, the adjustment being in a direction of a longitudinal axis of the central stem.
37. An acoustic extension as claimed in claim 29, wherein the acoustic extension is removably attached to the enclosure.
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38. An acoustic extension as claimed in claim 29, wherein the acoustic extension is selected from the group consisting of: a bass reflex port, a tuned port, a passive radiator, and a concentric loading.
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39. A speaker comprising:

- (a) an enclosure with at least one wall;
 - (b) an acoustic driver being attached to a front wall of the enclosure;
 - (c) an acoustic extension being mounted to the enclosure externally of the enclosure and being operatively connected to the interior of the enclosure;
 - (d) the enclosure and a frame of the acoustic driver being made of a heat conductive material; and
 - (e) the acoustic extension having outlet air gap facing towards the enclosure to pass air over the enclosure to assist cooling of the enclosure.
40. A speaker as claimed in claim 39, wherein the plurality of columns comprises:
- (a) an inner column mounted to the outer wall and extending towards the inner wall, there being an air gap between a free end of the inner column and the inner wall;
 - (b) an intermediate column mounted to the inner wall and extending towards the outer wall, there being an air gap between a free end of the intermediate column and the outer wall; and
 - (c) an outer column mounted to the outer wall and extending to a plane of the inner wall, there being an outlet air gap between the outer column and the inner wall.
41. A speaker as claimed in claim 39, wherein the enclosure comprises four mutually perpendicular side walls, the four mutually perpendicular side walls being extended to comprise the intermediate column.
42. A speaker as claimed in claim 39, wherein the outer column extends forwardly to a plane of the front wall.
43. A speaker as claimed in claim 39, wherein the acoustic extension is adjustable relative to the enclosure, the adjustment being in a direction of a longitudinal axis of the central stem.
44. A speaker as claimed in claim 39, wherein the acoustic extension is removably attached to the enclosure.

45. A speaker as claimed in claim 39, wherein the acoustic extension is selected from the group consisting of: a bass reflex port, a tuned port, a passive radiator, and a concentric loading.